



S/N 09/893109

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: KUROKAWA ET AL Examiner: M. CHARLES
Serial No.: 09/893,109 Group Art Unit: 3682
Filed: JUNE 27, 2001 Docket No.: 8373.245US01
Title: LOW NOISE ROLLER CHAIN

#14/
Appeal
Brief
1-13-04
[Signature]

CERTIFICATE UNDER 37 CFR 1.10:

"Express Mail" mailing label number: EV 321727494 US
Date of Deposit: December 14, 2003

I hereby certify that this paper or fee is being deposited with the U.S. Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 on the date indicated above and is addressed to: Mail Stop Appeal Brief - Patents, , Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450

By:

Name: Teresa Anderson

[Signature: Teresa Anderson]

APPELLANT'S BRIEF ON APPEAL

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

23552

PATENT TRADEMARK OFFICE

RECEIVED

JAN 05 2004

GROUP 3682

Sir:

This Brief is presented in support of the Appeal filed August 25, 2003, from the final rejection of Claims 1-3 of the above-identified application, as set forth in the Office Action mailed February 25, 2003.

A check for \$330.00 to cover the required fee for filing this Brief is enclosed. An original and two copies of the Brief are enclosed herewith.

I. REAL PARTY OF INTEREST

The Real Party of Interest is Daido Kogyo Co., Ltd. , and Honda Giken Kogyo Kabushiki Kaisha of Kaga, Ishikawa Prefecture, Japan and Tokyo, Japan, respectively.

II. RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences for the above-referenced patent application.

Appellant's are unaware of any appeals or interferences that would directly affect or be directly affected by the outcome of the present appeal

III. STATUS OF CLAIMS

Claims 1-3 are pending and are the subject of this Appeal (Appendix 1, Claims).

IV. STATUS OF AMENDMENTS

An Amendment in response to the final Office Action was filed on August 25, 2003; the same day that the Notice of Appeal was filed. The Amendment after final was not entered as indicated in the Advisory Action of September 3, 2003. Thus, the claims are appealed in the status as of the Amendment dated December 11, 2002, filed in response to the First Official Action.

V. SUMMARY OF THE INVENTION

Briefly, Appellants' invention is directed to a roller chain for use in a motorcycle as a power transmission drive. The invention represents an improvement to a conventional roller chain in that the invention is capable of reducing noises generated when the chain engages a sprocket.

With reference to specification page 5, lines 23, to page 6, line 5 and also to Fig. 1, roller chain 10 includes inner links 11 and outer links 12. Inner links 11 each include a hollow cylindrical bushing 13 and a pair of opposed inner plates 14 connected to opposite ends of bushing 13. Outer links 12 each include a pin 15 and a pair of opposed outer plates 16 connected to opposite ends of the pin 15. The pin 15 extends through the bushing 13.

With reference to page 6, lines 6-15, and also with reference to Figs. 1 and 2, roller chain 10 further has a rigid roller 17 made of metal and an elastic roller 18 made of an elastic material that are slideably fitted on each bushing 13. The rigid and elastic rollers 17 and 18 are disposed end to end and jointly form a roller assembly 19. As shown in Fig. 1, the elastic roller 18 has an outside diameter D which is larger than an outside diameter d of the rigid roller 17. The rigid roller 17 has a width w along the axis of the roller assembly 19, and the elastic roller 18 has a width W along the axis of the roller assembly 19.

With reference to page 7, lines 5-10, and also with reference to Fig. 2, a seal ring such as an O-ring 20 is disposed between an outer surface of each inner plate 14 and an inner surface of a corresponding one of the outer plate 16 so that a lubricating oil filled in a clearance between the pin 15 and the bushing 13 is sealed by the O-ring 20 against leakage.

With reference to page 6, line 26 to page 7, line 4, and also with reference to new Figs. 7 and 8, the length of roller chain 10 includes more than two longitudinal portions of uniform lengths, and the zigzag pattern of the elastic rollers 18 in one longitudinal chain portion is opposite in phase to the zigzag pattern of the elastic rollers 18 in the adjacent longitudinal chain portion.

It is the specific percentage range of width W to an overall width $(W + w)$, as well as the specific range of diameter D which is larger than the outside diameter d , which leads to reduced noises in the operation of the roller chain. Further, additional noise reduction is achieved with the more than two longitudinal portions of roller chain such that the zigzag pattern of the elastic rollers 18 in one longitudinal chain portion is opposite in phase to the zigzag pattern of the elastic rollers 18 in the adjacent longitudinal chain portion.

VI. ISSUES PRESENTED FOR REVIEW

The following issues from the February 25, 2003, Final rejection are presented for review:

1. Whether the original disclosure provides support for showing in new Figs. 7 and 8 a roller chain comprising two or more longitudinal chain portions of uniform length, the zigzag pattern of the elastic rollers in one of the longitudinal chain portions being opposite in phase to the zigzag pattern of the elastic rollers in the adjacent chain portion.
2. Whether claim 3, when considered under 35 U.S.C. § 112, first paragraph, contains subject matter which is described in the specification in such a way as to enable one skilled in the art to which it pertains to make and/or use the invention.
3. Whether claims 1 and 3, under 35 U.S.C. § 103 (a) are non-obvious on consideration of Japanese Patent Doc. 7-83290 (Japan '290).

VII. GROUPING OF CLAIMS

For purposes of the present Appeal only, claims 1-2 are considered to stand or fall together. Claim 3 supports a separate argument for patentability.

VIII. ARGUMENT

New Figs. 7 and 8 are supported by the disclosure. Claim 3 is supported by the disclosure and claims 1-2 are not obvious in view of Japan '290.

SUMMARY

Proposed Figs. 7 and 8 Do Not Introduce New Matter into the Drawings.

In the Final Action, the Examiner stated:

The original disclosure does not support the showing of two sections of chain, one beginning where the other ends, with elastic rollers in a zigzag configuration alternating

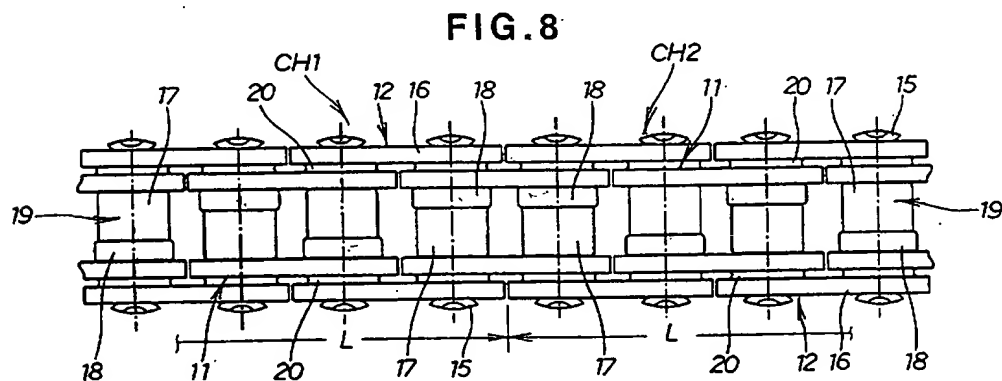
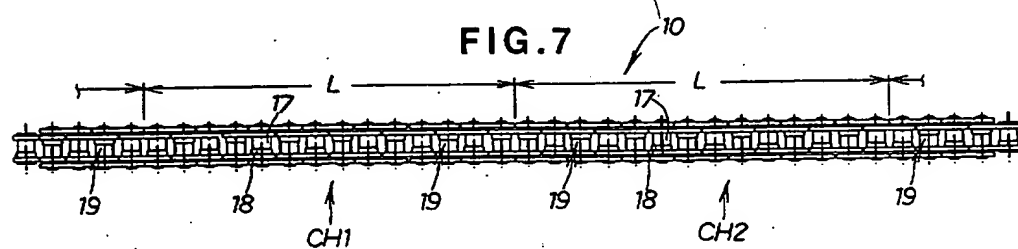


sides with each link, the zigzag configuration in each section 180 degrees out of phase with the adjacent section.

To the contrary, the specification states at page 6, line 26 to page 7, line 4, the following :

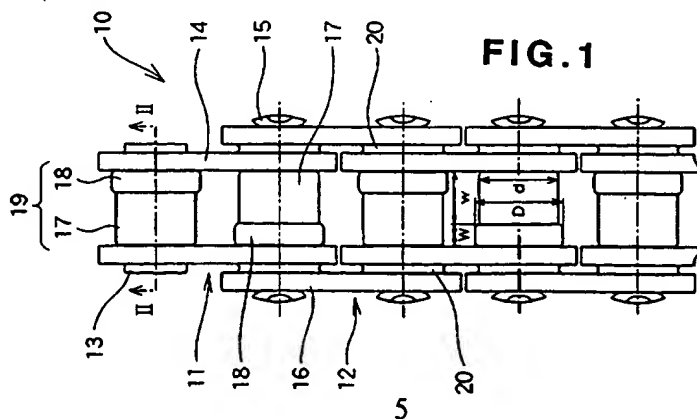
It will be appreciated that the length of the roller chain 10 comprises more than two longitudinal portions of uniform lengths and the zigzag pattern of the elastic rollers 18 in one longitudinal chain portion is opposite in phase to the zigzag pattern of the elastic rollers 18 in the adjacent longitudinal chain portion.

Proposed Figs. 7 and 8 were filed on December 11, 2002.



The Examiner disapproved them and indicated that they introduce new matter.

Applicant asserts that the drawings do not introduce new matter. On consideration of Fig. 1,

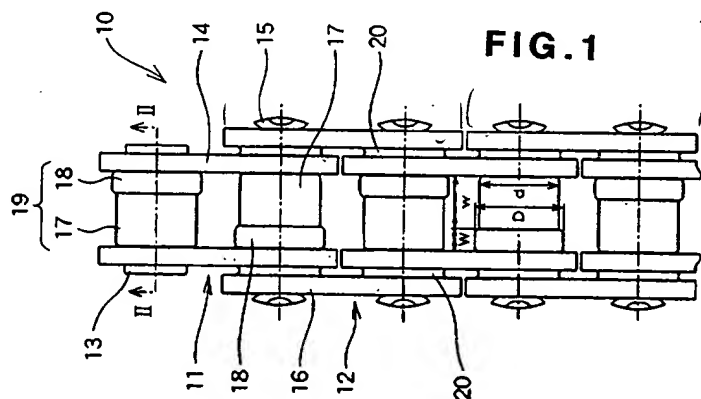


as well as the quoted portion of the specification above, it is clear that proposed Fig. 7 and 8 only show longer portions of the chain 10 of Fig. 1 except where two lengths "L" meet. It is at that point where the language of the specification describes what is shown in Figs. 7 and 8, namely, "the zigzag pattern of the elastic rollers 18 in one longitudinal chain portion is opposite in phase to the zigzag pattern of the elastic rollers 18 in the adjacent longitudinal chain portion."

It is requested that the proposed Figs. 7 and 8 be approved for entry in the case.

CLAIM 3 IS ENABLED

The Examiner in the Final Action rejected claim 3 under 35 U.S.C. 112, first paragraph, as not being enabled by indicating that it was unclear from the specification what "a roller chain comprising two or more longitudinal chain portions" refers to. For the sake of clarity in the present argument, applicant shows again Fig. 1 as follows:



In addition to Fig. 1, please refer again to the specification at page 6, line 26 to page 7, line 4, as follows:

... the roller chain 10 comprises more than two longitudinal portions of uniform lengths and the zigzag pattern of the elastic rollers 18 in one longitudinal chain portion is opposite in phase to the zigzag pattern of the elastic rollers 18 in the adjacent longitudinal portion. (Emphasis added)

Fig. 1 clearly shows the configuration of the roller chain; the language of the specification clearly describes longitudinal portions such that adjacent ones are "are opposite in phase".

The disclosure makes it clear what "a roller chain comprising two or more longitudinal chain portions" refers to. The rejection of claim 3 based on 35 U.S.C. 112, first paragraph, should be withdrawn.

CLAIMS 1-2 ARE NON-OBVIOUS OVER JAPAN '290

Japan '290 discloses that an annular cushion member 16 made of rubber or synthetic resin has an outside diameter larger than the outside diameter of a roller 15 and an inside diameter slightly larger than the outside diameter of a bushing 12 so that the cushion member 16 is rotatable around the bushing 12. The width W2 of the cushion member 16 is dimensioned to satisfy the expressions: $W2 < W1 - L$; $L + W2 \approx T2$, where W1 is the distance between inner link plates 13, 13, L is the length of roller 15, and T2 is the effective width of the bottom S2 of a sprocket S1. Japan '290 has no disclosure or teaching about the width ratio of the cushion member 16 and a roller assembly composed of roller 15 and cushion member 16 disposed coaxially end to end. Furthermore Japan '290 is completely silent with respect to the extent that cushion member 16 might be larger in thickness than roller 15.

Thus, with reference to claim 1, Japan '290 does not disclose:

the elastic roller having a width along an axis of the roller assembly, which is 13 to 45% of an overall width of the roller assembly along the axis thereof, and

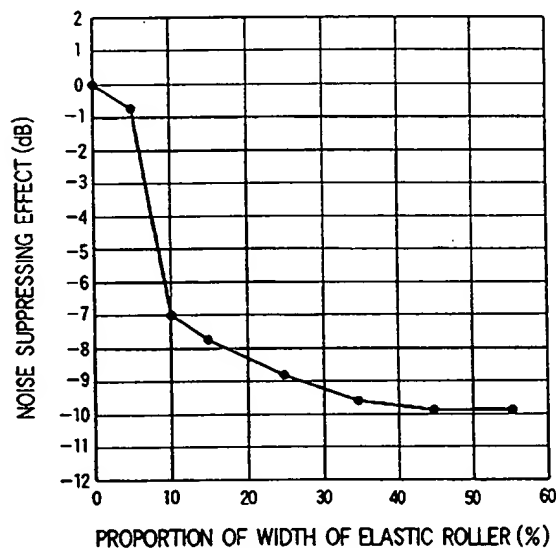
the elastic roller having a uniform thickness throughout the width thereof, the thickness of the elastic roller being larger than a thickness of the rigid roller by 5 to 25% of the thickness of the elastic roller.

Applicant has done and has disclosed in the specification extensive experimentation with respect to identifying an appropriate width and an appropriate thickness of the elastic roller for a roller chain such that there is substantial noise suppressing effect and such that the elastic roller is durable.

With reference to Fig. 3 shown below, the specification at page 8, lines 20-27 states:

Especially, with an increase in the proportion of the width of the elastic roller 18 from the (sic) 5 to 10%, the sound level sharply drops to about -7dB. . . . for a proportion of the width of the elastic roller 18, which is greater than 40% of the overall width of the roller assembly 19, no noise suppressing effect can be attained.

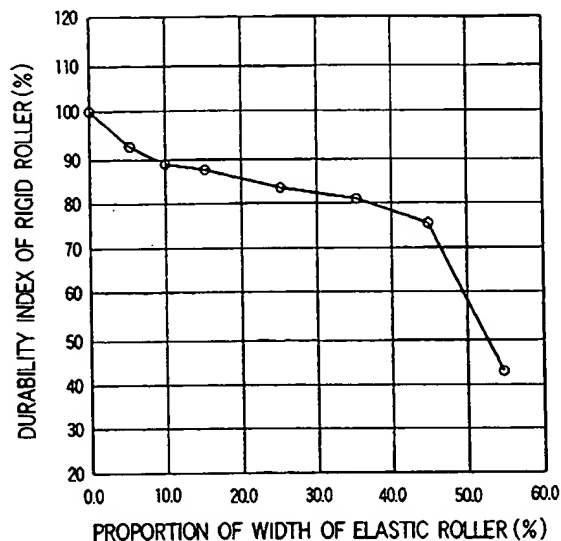
FIG. 3



With reference to Fig. 5, shown below, the specification at page 10, lines 23 -24, states:

When the proportion of the elastic roller width exceeds 45%, the durability index drops abruptly.

FIG. 5



With reference to page 11, lines 20-23, it is concluded that:

It is apparent from the test results described above with reference to Figs. 3-6 that the width of the elastic roller 18 is preferably in the range of 13 to 45% of the overall width of the roller assembly 19...

That is, the limitation of claim 1 that "the elastic roller having a width along an axis of a roller assembly which is 13 to 45% of an overall width of the roller assembly along the axis thereof" was established through extensive testing as reported in the specification and depicted in Figs. 3 and 5 with the specification then making the conclusion as indicated.

Likewise, with respect to the thickness range of the elastic roller, with reference to Fig. 4 and the specification at page 9, lines 15-22, experimental results establish an appropriate range of thickness which results in effective noise suppression, as follows:

As the amount of elastic deformation of the elastic roller increases from 0 to 5% of the thickness of the elastic roller 18, the sound level sharply drops to about -7dB. . . . For an elastic deformation of the elastic roller 18, which is greater than 20%, noise suppressing effect cannot be attained any more.

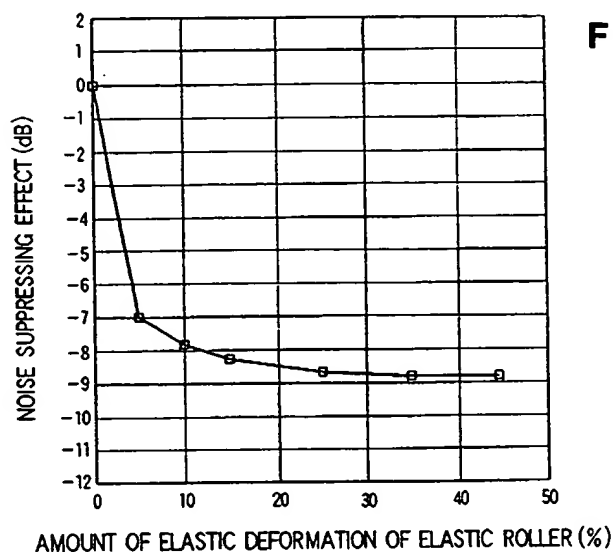


FIG. 4

With reference to Fig. 6 and the specification at page 11, lines 17-19, it is stated:

When the amount of elastic roller deformation exceeds 35% of the thickness of the elastic roller 18, the durability index drops abruptly.

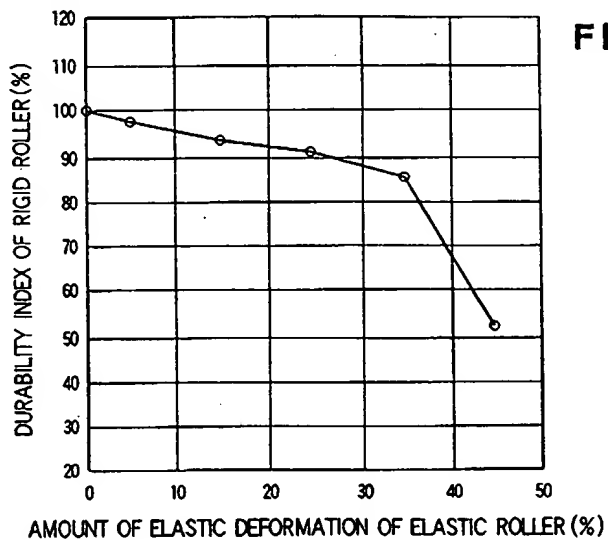


FIG. 6

From these experimental results, the specification makes the conclusion at page 11, lines 23-27, that:

... the amount of elastic deformation of the elastic roller (i.e., the difference between the thickness of the elastic roller 18 and the (sic) of the rigid roller 17) is preferably in the range of 5 to 25% of the thickness of the elastic roller 18...

Thus, the experimental results discussed in the specification and depicted with respective Figs. 4 and 6 result in the conclusion, as claimed in claim 1, that "the elastic roller having a uniform thickness throughout the width thereof, the thickness of the elastic roller being larger than a thickness of the rigid roller by 5 to 25% of the thickness of the elastic roller."

Japan '290 does not disclose precisely when effective noise suppression can be obtained and when it cannot. Hence, the structure of Japan '290 may or may not result in effective noise suppression. Hence, considering the prior art, it is surprising that there is a range of width and of thickness for an elastic roller of a roller assembly of a roller chain which results in effective noise suppression and durability. As a result, claims 1 and 2 are non-obvious in view of the prior art.

CONCLUSION

In view of the above, applicant submits that the disapproval of entry of new Figs. 7 and 8, the rejection of claim 3 under 35 U.S.C. 112, first paragraph, and the rejection of claims 1-2 under 35 U.S.C. 103 (a) as given in the Final Rejection are untenable and should be reversed.

Please charge any additional fees or credit overpayment to Merchant & Gould Deposit

Account No. 13-2725.

Respectfully Submitted,

MERCHANT & GOULD P.C.
P.O. Box 2903
Minneapolis, MN 55402-0903
(612) 332-5300

Dated: December 18, 2003

By Curtis B. Hamre
Curtis B. Hamre
Reg. No. 29,165
CHamre:lad

APPENDIX 1

THE CLAIMS ON APPEAL (as finally amended)

1. A low noise roller chain comprising:

inner and outer links alternatively arranged and articulately connected together in a longitudinal direction of the roller chain,

the inner links each having a bushing and a pair of inner plates connected to opposite ends of the bushing, respectively,

the outer links each having a pin and a pair of outer plates connected to opposite ends of the pin, respectively, the pin extending through the bushing; and

a rigid roller made of metal and an elastic roller made of elastic material that are arranged end to end and fitted on the bushing so as to jointly form a roller assembly,

the elastic roller having a width along an axis of the roller assembly, which is 13 to 45% of an overall width along an axis of the roller assembly, which is 13 to 45% of an overall width of the roller assembly along the axis thereof, and

the elastic roller having a uniform thickness throughout the width thereof, the thickness of the elastic roller being larger than a thickness of the rigid roller by 5 to 25% of the thickness of the elastic roller.

2. A low noise roller chain according to claim 1, wherein the elastic roller is arranged in a zigzag pattern in a longitudinal direction of the roller chain.

3. A low noise roller chain according to claim 2, wherein the roller chain comprises two or more longitudinal chain portions of uniform lengths, the zigzag pattern of the elastic rollers in one of the longitudinal chain portions being opposite in phase to the zigzag pattern of the elastic rollers in the adjacent chain portion.



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/893,109	06/27/2001	Yoshio Kurokawa	8373.245US01	4901

23552 7590 09/03/2003

MERCHANT & GOULD PC
3200 IDS CENTER
80 SOUTH EIGHTH STREET
MINNEAPOLIS, MN 55402-0903

CBH

EXAMINER

CHARLES, MARCUS

ART UNIT	PAPER NUMBER
----------	--------------

3682

DATE MAILED: 09/03/2003

Appeal Brief-Final: Feb 25, 2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Advisory Action

Application No.

09/893,109

Applicant(s)

KUROKAWA ET AL.

Examiner

Marcus Charles

Art Unit

3682

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 25 August 2003 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE. Therefore, further action by the applicant is required to avoid abandonment of this application. A proper reply to a final rejection under 37 CFR 1.113 may only be either: (1) a timely filed amendment which places the application in condition for allowance; (2) a timely filed Notice of Appeal (with appeal fee); or (3) a timely filed Request for Continued Examination (RCE) in compliance with 37 CFR 1.114.

PERIOD FOR REPLY [check either a) or b)]

- a) ☒ The period for reply expires 6 months from the mailing date of the final rejection.
- b) ☐ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.
- ONLY CHECK THIS BOX WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

1. ☐ A Notice of Appeal was filed on _____. Appellant's Brief must be filed within the period set forth in 37 CFR 1.192(a), or any extension thereof (37 CFR 1.191(d)), to avoid dismissal of the appeal.
2. ☒ The proposed amendment(s) will not be entered because:
- (a) ☐ they raise new issues that would require further consideration and/or search (see NOTE below);
 - (b) ☐ they raise the issue of new matter (see Note below);
 - (c) ☒ they are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
 - (d) ☐ they present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: See Continuation Sheet.

3. ☐ Applicant's reply has overcome the following rejection(s): _____.
4. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
5. ☐ The a) ☐ affidavit, b) ☐ exhibit, or c) ☐ request for reconsideration has been considered but does NOT place the application in condition for allowance because: _____.
6. ☐ The affidavit or exhibit will NOT be considered because it is not directed SOLELY to issues which were newly raised by the Examiner in the final rejection.
7. ☒ For purposes of Appeal, the proposed amendment(s) a) ☒ will not be entered or b) ☐ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.

The status of the claim(s) is (or will be) as follows:


Claim(s) allowed: _____.

Claim(s) objected to: _____.

Claim(s) rejected: 1-3 as per final rejection mailed 02-25-2003.

Claim(s) withdrawn from consideration: _____.

8. ☐ The proposed drawing correction filed on _____ is a) ☐ approved or b) ☐ disapproved by the Examiner.
9. ☐ Note the attached Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____.
10. ☐ Other: _____


Marcus Charles
Primary Examiner
Art Unit: 3682

9/02/03

Continuation of 2. NOTE: the proposed amendment does not overcome the final rejection. The claims stand rejected as per the final rejection .

MEMORY TRANSMISSION REPORT

PAGE : 001
TIME : AUG-25-03 11:38AM
TEL NUMBER1: 6123329081
TEL NUMBER2: 6123329081
NAME : Merchant & Gould 3

FILE NUMBER : 224
DATE : AUG-25 11:35AM
TO : 2555067917033057687
DOCUMENT PAGES : 008
START TIME : AUG-25 11:35AM
END TIME : AUG-25 11:38AM
SENT PAGES : 008
STATUS : OK

FILE NUMBER : 224

*** SUCCESSFUL TX NOTICE ***

Merchant & Gould

An Intellectual Property Law Firm

3200 IDS Center
80 South Eighth Street
Minneapolis, Minnesota
55402-2215 USA
TEL 612.332.5300
FAX 612.332.9081
www.merchant-
gould.com

A Professional Corporation

Fax Transmission | August 25, 2003

TO: Commissioner for Patents
Attn: Examiner Justin Stefanon
P.O. Box 1450
Alexandria, VA 22313-1450

FROM: Curtis B. Hamre

OUR REF: 8373.245US01
TELEPHONE: 612.336.4722

Total pages, including cover letter: 8

PTO FAX NUMBER 1-703-305-7687

If you do NOT receive all of the pages, please telephone us at 612.332.5300, or fax us at 612.332.9081.

Title of Document Transmitted:

Three Month Petition for Extension of Time,
Amendment Under 37 C.F.R. 1.116 and Notice
of Appeal From the Examiner to the Board of
Patent Appeals and Interferences

Applicant: Kurokawa et al.
Serial No.: 09/893,102
Filed: June 27, 2001
Group Art Unit: 3682
Our Ref. No.: 8373.245US01

Please charge Deposit Account No. 13-2725 in the amount of \$930.00 and \$320.00 for Three Month Petition for Extension of Time and Notice of Appeal Fee. Please charge any additional fees or credit overpayment to Deposit Account No. 13-2725. Please consider this a PETITION FOR EXTENSION OF TIME for a sufficient number of months to enter these papers, if appropriate.

By: Curtis B. Hamre
Name: Curtis B. Hamre
Reg. No.: 29,165

I hereby certify that this paper is being transmitted by facsimile to the U.S. Patent and Trademark Office on the date shown below.

Ganda K. Smith
Signature

08-25-03
Date

GEN033.DOT

Merchant & Gould

An Intellectual Property Law Firm

3200 IDS Center
80 South Eighth Street
Minneapolis, Minnesota
55402-2215 USA
TEL 612.332.5300
FAX 612.332.9081
www.merchant-
gould.com

A Professional Corporation

Fax Transmission | August 25, 2003

TO: Commissioner for Patents
Attn: Examiner Justin Stefanon
P.O. Box 1450
Alexandria, VA 22313-1450

FROM: Curtis B. Hamre

OUR REF: 8373.245US01
TELEPHONE: 612.336.4722

Total pages, including cover letter: 8

PTO FAX NUMBER 1-703-305-7687

If you do NOT receive all of the pages, please telephone us at 612.332.5300, or fax us at 612.332.9081.

Title of Document Transmitted:

Three Month Petition for Extension of Time,
Amendment Under 37 C.F.R. 1.116 and Notice
of Appeal From the Examiner to the Board of
Patent Appeals and Interferences

Applicant: Kurokawa et al.
Serial No.: 09/893,109
Filed: June 27, 2001
Group Art Unit: 3682
Our Ref. No.: 8373.245US01

Please charge Deposit Account No. 13-2725 in the amount of \$930.00 and \$320.00 for Three Month Petition for Extension of Time and Notice of Appeal Fee. Please charge any additional fees or credit overpayment to Deposit Account No. 13-2725. Please consider this a PETITION FOR EXTENSION OF TIME for a sufficient number of months to enter these papers, if appropriate.

By: Curtis B. Hamre

Name: Curtis B. Hamre

Reg. No.: 29,165

I hereby certify that this paper is being transmitted by facsimile to the U.S. Patent and Trademark Office on the date shown below.

J. Panda Kuriesto
Signature

08-25-03
Date

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: KUROKAWA ET AL. Examiner: J. STEFANON
Serial No.: 09/893,109 Group Art Unit: 3682
Filed: JUNE 27, 2001 Docket No.: 8373.245US01
Title: LOW NOISE ROLLER CHAIN

CERTIFICATE UNDER 37 CFR 1.6(d):

I hereby certify that this paper is being transmitted by facsimile to the U.S. Patent and Trademark Office on August 25, 2003.

By: Wanda Kuriesto
Name:

PETITION FOR EXTENSION OF TIME

Mail Stop AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

In accordance with the provisions of 37 C.F.R. §1.136(a), it is respectfully requested that a three-month extension of time be granted in which to respond to the outstanding Office Action mailed February 25, 2003, said period of response being extended from May 25, 2003 to August 25, 2003.

Please charge Deposit Account No. 13-2725 in the amount of \$930.00 to cover the required extension fee for a large entity.



Date: 8-25-03

Respectfully submitted,

MERCHANT & GOULD P.C.
P.O. Box 2903
Minneapolis, Minnesota 55402-0903
(612) 332-5300

Curtis B. Hamre

Curtis B. Hamre
Reg. No. 29,165
CBH:PSTpmc

**RESPONSE UNDER 37 C.F.R. 1.116
EXPEDITED PROCEDURE
EXAMINING GROUP 3682**

S/N 09/893,109

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	KUROKAWA ET AL.	Examiner:	J. STEFANON
Serial No.:	09/893,109	Group Art Unit:	3682
Filed:	JUNE 27, 2001	Docket No.:	8373.245US01
Title:	LOW NOISE ROLLER CHAIN		

CERTIFICATE UNDER 37 CFR 1.6(d): I hereby certify that this paper is being transmitted by facsimile to the U.S. Patent and Trademark Office on August 25, 2003.

By: *Gianna Kinisto*
Name:

AMENDMENT UNDER 37 C.F.R. § 1.116

Mail Stop AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

In response to the Office Action mailed February 25, 2003, please amend the above-identified application as follows:

Amendments to the Claims are reflected in the listing of claims that begins on page 2 of this paper.

Remarks begin on page 3 of this paper

Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

1. (Currently Amended) A low noise roller chain comprising:
inner and outer links alternately arranged and articulately connected together in a longitudinal direction of the roller chain,
the inner links each having a bushing and a pair of inner plates connected to opposite ends of the bushing, respectively,
the outer links each having a pin and a pair of outer plates connected to opposite ends of the pin, respectively, the pin extending through the bushing; and
a rigid roller made of metal and an elastic roller made of elastic material that are arranged end to end and fitted on the bushing so as to jointly form a roller assembly,
the elastic roller having a width along an axis of the roller assembly, which is 13 to 45% of an overall width of the roller assembly along the axis thereof, ~~and~~
the elastic roller having a uniform thickness throughout the width thereof, the thickness of the elastic roller being larger than a thickness of the rigid roller by 5 to 25% of the thickness of the elastic roller, ~~roller~~;
the elastic roller being arranged in a zigzag pattern in a longitudinal direction of the roller chain, and
the roller chain comprising two or more longitudinal chain portions of uniform lengths,
the zigzag pattern of the elastic rollers in one of the longitudinal chain portions being opposite in phase to the zigzag pattern of the elastic rollers in the adjacent chain portion.
2. (Canceled)
3. (Canceled)

REMARKS

Claim 1 has been amended. Claims 2-3 have been cancelled. Claim 1 remains pending. Reconsideration and reexamination of the application, as amended, are requested.

The Examiner disapproved Applicants' request to add Figures 7 and 8 to the application. Applicant requests reconsideration.

In the specification, the paragraph beginning at page 6, line 26, states:

It will be appreciated that the length of the roller chain 10 comprises more than two longitudinal portions of uniform lengths, and the zigzag pattern of the elastic rollers 18 in one longitudinal chain portion is opposite in phase to the zigzag pattern of the elastic rollers 18 in the adjacent longitudinal chain portion.

The language of original claim 3 reads as follows:

. . . the roller chain comprises two or more longitudinal chain portions of uniform lengths, the zigzag pattern of the elastic rollers in one of the longitudinal chain portions being opposite in phase to the zigzag portion of the elastic rollers in the adjacent chain portion.

Figures 7 and 8, submitted by Applicants in the last response, are nothing more than Figure 1 and a depiction of the language quoted from the specification and claim 3. It takes no imagination on a comparison of Figure 1 and the quoted language to visualize what is shown in Figures 7 and 8. There is no new matter added. Applicants respectfully request reconsideration of the disapproval of the proposed entry of Figures 7 and 8. Likewise, Applicants request the withdrawal of the rejection under 35 U.S.C. § 112, first paragraph, of claim 3.

The Examiner rejected claims 1-2 under 35 U.S.C. § 103(a) as being obvious on consideration of Japanese Document 7-83290. Claim 1 has been amended to include the limitations of claims 2 and 3. Hence, this rejection is moot.

In view of the above, it is submitted that the application is in condition for allowance. Reconsideration and reexamination are requested. Allowance of claim 1 and the approval of Figures 7 and 8 for entry in the application is solicited.

Respectfully submitted,

MERCHANT & GOULD P.C.
P.O. Box 2903
Minneapolis, Minnesota 55402-0903
(612) 332-5300

Date: 8-25-03

Curtis B. Hamre

Curtis B. Hamre
Reg. No. 29,165
CBH:PSTpmc



S/N 09/893,109

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	KUROKAWA ET AL.	Examiner:	J. STEFANON
Serial No.:	09/893,109	Group Art Unit:	3682
Filed:	JUNE 27, 2001	Docket No.:	8373.245US01
Title:	LOW NOISE ROLLER CHAIN		

CERTIFICATE UNDER 37 CFR 1.6(d):

I hereby certify that this paper is being transmitted by facsimile to the U.S. Patent and Trademark Office on August 25, 2003.

By: *Danda Kuriesto*
Name:

NOTICE OF APPEAL FROM THE EXAMINER
TO THE BOARD OF PATENT APPEALS AND INTERFERENCES

Mail Stop AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In accordance with 37 C.F.R. § 1.191, Applicants hereby appeal to the Board of Patent Appeals and Interferences from the final rejection of claims 1-3 of the above-identified application, as set forth in the Office Action mailed February 25, 2003.

Please charge Deposit Account No. 13-2725 in the amount of \$320.00 to cover the required fee for filing this Notice of Appeal as set forth under 37 C.F.R. § 1.17(b).

Also enclosed is a Petition for three-month extension of time to respond to the final rejection, thereby extending said period of response from May 25, 2003 to August 25, 2003. Please charge Deposit Account No. 13-2725 in the amount of \$930.00 to cover the required extension fee for large entity.

Please charge any additional fees or credit any overpayment to Merchant & Gould P.C.,
Deposit Account No. 13-2725.

Respectfully submitted,

MERCHANT & GOULD P.C.
P.O. Box 2903
Minneapolis, Minnesota 55402-0903
(612) 332-5300

Date: 8-25-03



Curtis B. Hamre
Reg. No. 29,165
CBH:PSTpmc





UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/893,109	06/27/2001	Yoshio Kurokawa	8373.245US01 ✓	4901

23552 7590 02/25/2003

MERCHANT & GOULD PC
P.O. BOX 2903
MINNEAPOLIS, MN 55402-0903

CBH

EXAMINER

STEFANON, JUSTIN

ART UNIT

PAPER NUMBER

3682

DATE MAILED: 02/25/2003

FR 2mo: Apr. 25, 2003

FR 3/PTA: May 25, 2003 D✓

FR 6mo: Aug. 25, 2003

Please find below and/or attached an Office communication concerning this application or proceeding.

PROLAW

Office Action Summary

Application No.

09/893,109

Applicant(s)

KUROKAWA ET AL.

Examiner

Justin Stefanon

Art Unit

3682

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 December 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 11 December 2002 is: a) ☐ approved b) ☒ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Drawings

1. The proposed drawing correction and/or the proposed substitute sheets of drawings, filed on December 11, 2002 have been disapproved because they introduce new matter into the drawings. 37 CFR 1.121(f) states that no amendment may introduce new matter into the disclosure of an application. The original disclosure does not support the showing of two sections of chain, one beginning where the other ends, with elastic rollers in a zig-zag configuration alternating sides with each link, the zig-zag configuration in each section 180 degrees out of phase with the adjacent section.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claim 3 is rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. It is unclear from the specification what "a roller chain comprising two or more longitudinal chain portions" refers to.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

Art Unit: 3682

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent Document 7-83290.

The Japanese document discloses a chain with inner and outer links 13,14 with a bushing 12 and a pin 11, a rigid roller 15 and an elastic roller 16. As shown in Figure 5, the elastic rollers are arranged in a zigzag pattern in a longitudinal direction of the chain. The elastic roller, as shown in Figures 2 and 4, is approximately 20% of an overall width of the roller assembly along a longitudinal axis of the roller assembly, and as shown in Figure 6 varies in thickness from approximately equal to the thickness of rigid roller to approximately 1.5 times as thick as the rigid roller, i.e. 0 to 50% of the thickness of the elastic roller, which comprises 5 to 25% of the thickness of the elastic roller. While the Japanese document does not show precise ranges of width ratios in the drawings, the present disclosure does not show any unexpected results. It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the claimed ratios of width and thickness, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Response to Arguments

6. Applicant's arguments filed December 11, 2002 have been fully considered but they are not persuasive. Applicant argues that the prior art does not disclose the specific width ratios claimed because the drawings are not to scale. However, the claims are rejected for obviousness only, i.e. that it would be obvious to one of skill in

Art Unit: 3682

the art to utilize the ratios as shown in the drawings of the Japanese document, whether or not the specification of the Japanese document discloses these ratios in the text.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Justin Stefanon whose telephone number is 703-305-1945. The examiner can normally be reached on Mon-Fri 6 - 3:30, alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David A. Bucci can be reached on 703-308-3668. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-7687 for regular communications and 703-305-7687 for After Final communications.

Art Unit: 3682

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1113.

js
February 23, 2003

DAVID A. BUCCI
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3600

Receipt is hereby acknowledged for the following in the U.S. Patent and Trademark Office:

In re Application of: KUROKAWA ET AL.

For: LOW NOISE ROLLER CHAIN

Docket No.: 8373.245US01

Filed: JUNE 27, 2001

Express Mail No.: EV168364616US

Date Mailed: December 11, 2002

Serial No.: 09/893,109

Due Date: DECEMBER 11, 2002

- ☒ Transmittal Sheet in duplicate containing Certificate of Mailing
- ☒ Amendment Including Version With Markings To Show Changes Made
- ☒ Proposed Changes to the Drawings, 1 Sheet of Drawings (new Figures 7 and 8)
- ☒ Return postcard

Patent

JRandall:PSTdb:ac



EV 168364616 US

Mailing Label

Label 11-F June 2002



UNITED STATES POSTAL SERVICE®

Post Office To Addressee

ORIGIN (POSTAL USE ONLY)				DELIVERY (POSTAL USE ONLY)			
PO ZIP Code	Day of Delivery <input type="checkbox"/> Next <input type="checkbox"/> Second <input type="checkbox"/>		Flat Rate Envelope <input type="checkbox"/>	Delivery Attempt	Time <input type="checkbox"/> AM <input type="checkbox"/> PM	Employee Signature	
Date In Mo. Day Year	<input type="checkbox"/> 12 Noon <input type="checkbox"/> 3 PM		Postage \$	Delivery Attempt	Time <input type="checkbox"/> AM <input type="checkbox"/> PM	Employee Signature	
Time In <input type="checkbox"/> AM <input type="checkbox"/> PM	Military <input type="checkbox"/> 2nd Day <input type="checkbox"/> 3rd Day	Return Receipt Fee		Delivery Date	Time <input type="checkbox"/> AM <input type="checkbox"/> PM	Employee Signature	
Weight lbs. ozs.	Int'l Alpha Country Code	COD Fee	Insurance Fee	<input type="checkbox"/> WAIVER OF SIGNATURE (Domestic Only) Additional merchandise insurance is void if waiver of signature is requested. I wish delivery to be made without obtaining signature of addressee or addressee's agent (if delivery employee judges that article can be left in secure location) and I authorize that delivery employee's signature constitutes valid proof of delivery.			
No Delivery <input type="checkbox"/> Weekend <input type="checkbox"/> Holiday	Acceptance Clerk Initials	Total Postage & Fees \$		NO DELIVERY <input type="checkbox"/> Weekend <input type="checkbox"/> Holiday <input type="checkbox"/> Customer Signature			
CUSTOMER USE ONLY				CUSTOMER USE ONLY			
METHOD OF PAYMENT: Express Mail Corporate Acct. No. X551962				Federal Agency Acct. No. or Postal Service Acct. No.			
FROM: (PLEASE PRINT) PHONE 612 332 5300 MERCHANT & GOULD 80 S 8TH ST STE 3200 MINNEAPOLIS MN 55402-2215				TO: (PLEASE PRINT) PHONE () BOX NON-FEE AMENDMENT COMMISSIONER FOR PATENTS WASHINGTON DC 20231-0001			
8373-245USD1 JRandall							
PRESS HARD. You are making 3 copies.				FOR PICKUP OR TRACKING CALL 1-800-222-1811 www.usps.com			

Applicant: KUROKAWA ET AL. Examiner: J. STEFANON
Serial No.: 09/893,109 Group Art Unit: 3682
Filed: JUNE 27, 2001 Docket: 8373.245US01
Confirmation No.: 4901
Due Date: DECEMBER 11, 2002
Title: LOW NOISE ROLLER CHAIN

CERTIFICATE UNDER 37 CFR 1.10:

"Express Mail" mailing label number: EV168364616US
Date of Deposit: December 11, 2002

I hereby certify that this paper or fee is being deposited with the U.S. Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 on the date indicated above and is addressed to Box Non-Fee Amendment, Commissioner for Patents and Trademarks, Washington, D.C. 20231.

By: 

Name: John Junkers

Box Non-Fee Amendment
Commissioner for Patents
Washington, D.C. 20231

EV168364616US

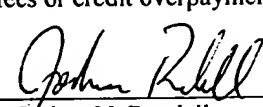
Sir:

We are transmitting herewith the attached:

- ☒ Transmittal Sheet in duplicate containing Certificate of Mailing
- ☒ Amendment Including Version With Markings To Show Changes Made
- ☒ Proposed Changes to the Drawings, 1 Sheet of Drawings (new Figures 7 and 8)
- ☒ Return postcard

Please consider this a PETITION FOR EXTENSION OF TIME for a sufficient number of months to enter these papers or any future reply, if appropriate. Please charge any additional fees or credit overpayment to Deposit Account No. 13-2725. A duplicate of this sheet is enclosed.

MERCHANT & GOULD P.C.
P.O. Box 2903, Minneapolis, MN 55402-0903
612.332.5300

By: 
Name: Joshua N. Randall
Reg. No.: 50,719
JRandall:PSTdb:ae



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: KUROKAWA ET AL. Examiner: J. STEFANON
Serial No.: 09/893,109 Group Art Unit: 3682
Filed: JUNE 27, 2001 Docket: 8373.245US01
Confirmation No.: 4901
Due Date: DECEMBER 11, 2002
Title: LOW NOISE ROLLER CHAIN

CERTIFICATE UNDER 37 CFR 1.10:

"Express Mail" mailing label number: EV168364616US
Date of Deposit: December 11, 2002

I hereby certify that this paper or fee is being deposited with the U.S. Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 on the date indicated above and is addressed to Box Non-Fee Amendment, Commissioner for Patents and Trademarks, Washington, D.C. 20231.

By: John Junker
Name: John Junker

Box Non-Fee Amendment
Commissioner for Patents
Washington, D.C. 20231

Sir:

We are transmitting herewith the attached:

- ☒ Transmittal Sheet in duplicate containing Certificate of Mailing
- ☒ Amendment Including Version With Markings To Show Changes Made
- ☒ Proposed Changes to the Drawings, 1 Sheet of Drawings (new Figures 7 and 8)
- ☒ Return postcard

Please consider this a PETITION FOR EXTENSION OF TIME for a sufficient number of months to enter these papers or any future reply, if appropriate. Please charge any additional fees or credit overpayment to Deposit Account No. 13-2725. A duplicate of this sheet is enclosed.

MERCHANT & GOULD P.C.
P.O. Box 2903, Minneapolis, MN 55402-0903
612.332.5300

By: Joshua N. Randall
Name: Joshua N. Randall
Reg. No.: 50,719
JRandall:PSTdb:ae



S/N 09/893,109

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	KUROKAWA ET AL.	Examiner:	J. STEFANON
Serial No.:	09/893,109	Group Art Unit:	3682
Filed:	JUNE 27, 2001	Docket No.:	8373.245US01
Title:	LOW NOISE ROLLER CHAIN		

CERTIFICATE UNDER 37 CFR 1.10:

"Express Mail" mailing label number: EV168364616US
Date of Deposit: December 11, 2002

I hereby certify that this correspondence is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 on the date indicated above and is addressed to Box Non-Fee Amendment, Commissioner for Patents, Washington, D.C. 20231.

By: _____

Name: John Junkers

AMENDMENT

Box Non-Fee Amendment
Commissioner for Patents
Washington, D.C. 20231

Dear Sir:

In response to the Office Action mailed on September 11, 2002, please enter the following amendments and remarks.

In the Drawings

Please add new Figures 7 and 8 as shown in the attached Proposed Changes to the Drawings.

In the Specification

Please replace the brief description of Figures 5 and 6 on page 6, lines 10-15 with the following new description:

--FIG. 5 is a graph showing the relation between the durability index and the proportion of width of the elastic rollers of the roller chain;

FIG. 6 is a graph showing the relation between the durability index and the amount of elastic deformation of the elastic rollers of the roller chain;--

Please insert the following brief description of Figures 7 and 8 on page 6, after line 15 of the specification as follows:

--FIG. 7 is a fragmentary plan view of a low noise chain according to a modification of the present invention; and

FIG. 8 is an enlarged view of a part of FIG. 7.--

Please replace the paragraph beginning at page 6, line 26 of the specification with the following new paragraph:

--It will be appreciated that the length of the roller chain 10 comprises more than two longitudinal portions of uniform lengths, and the zigzag pattern of the elastic rollers 18 in one longitudinal chain portion is opposite in phase to the zigzag pattern of the elastic rollers 18 in the adjacent longitudinal chain portion. In FIGS. 7 and 8, one longitudinal chain portion and the adjacent longitudinal chain portion of the roller chain 10 are designated by CH1 and CH2, respectively.--

In the Claims

Please amend claim 1 as follows:

1. (Amended) A low noise roller chain comprising:
inner and outer links alternately arranged and articulately connected together in a longitudinal direction of the roller chain,
the inner links each having a bushing and a pair of inner plates connected to opposite ends of the bushing, respectively,
the outer links each having a pin and a pair of outer plates connected to opposite ends of the pin, respectively, the pin extending through the bushing; and
a rigid roller made of metal and an elastic roller made of elastic material that are arranged end to end and fitted on the bushing so as to jointly form a roller assembly,

the elastic roller having a width along an axis of the roller assembly, which is 13 to 45% of an overall width of the roller assembly along the axis thereof, and

the elastic roller having a uniform thickness throughout the width thereof, the thickness of the elastic roller being larger than a thickness of the rigid roller by 5 to 25% of the thickness of the elastic roller.

REMARKS

Reconsideration of the application is requested in view of the above amendments and the following remarks. The specification has been amended and new Figures 7 and 8 have been added (See attached Proposed Changes to Drawings). Claim 1 has also been amended. Support for the amendments to claim 1 can be found at page 6, lines 6-17 and Figures 1, 2, 7 and 8 of the present specification. Changes made to the application by the current amendment are shown in the attached "Version With Markings to Show Changes Made."

Objections and § 112 Issues

Figures 7 and 8 have been added to clearly illustrate the features recited in claim 3 without introducing new matter. The specification has also been amended to reference new Figures 7 and 8. Applicants respectfully request withdrawal of the objection to the drawings.

Claim 3 was rejected under 35 U.S.C. § 112, first paragraph, as containing subject matter not described in the specification. As mentioned above, Figures 7 and 8 have been added along with the description of those figures in the specification. Applicants submit that the limitations of claim 3 are fully supported by the disclosure of the application. Withdrawal of the objection is respectfully requested.

Claims 1-3 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. Claim 1 has been amended to provide antecedent basis and is now definite.

The above referenced changes have been made to address formality issues only, and therefore should not be construed as limiting.

35 U.S.C. § 103 Rejection

Claims 1 and 2 were rejected under 35 U.S.C. § 103(a) as being unpatentable over JP 7-83290 ("the '290 reference"). Applicants respectfully traverse this rejection.

The '290 reference fails to disclose an "elastic roller having a width along an axis of the roller assembly, which is 13 to 45% of an overall width of the roller assembly along the axis thereof, and the elastic roller having a uniform thickness throughout the width thereof, the thickness of the elastic roller being larger than a thickness of the rigid roller by 5 to 25% of the thickness of

the elastic roller," as required by claim 1. The specific width ratio ranges recited in claim 1 are required in order to ensure a sufficient noise suppression while maintaining the necessary durability of the roller chain (see pages 9-12 of the present specification).

The '290 reference states that an annular cushion member 16 made of rubber or synthetic resin has an outside diameter larger than the outside diameter of a roller and an inside diameter slightly larger than the outside diameter of a bushing so that the cushion member 16 is rotatable around the bushing 12. The width $W2$ of the cushion member 16 is dimensioned to satisfy the expressions:

$$W2 < W1 - L; L + W2 = T2$$

where $W1$ is the distance between inner link plates (13, 13), L is the length of the roller 15, and $T2$ is the effective width of the bottom $S2$ of a sprocket tooth $S1$.

However, the '290 reference fails to disclose or suggest the width of the cushion member 16 and a roller assembly that is composed of the roller 15 and the cushion member 16 disposed coaxially end to end. Furthermore, the '290 reference is completely silent as to the extent to which the cushion member 16 is larger in thickness than the roller 15.

In rejecting claim 1, the Examiner relies on approximate dimensions of roller chain parts disclosed by the '290 reference, including the annular cushion member 16 and the roller 15 shown in the drawings. However, Applicants note that unlike the manufacturing drawings used for making the roller chain parts, patent drawings do not require dimensionally accurate drawings for which individual part dimensions or relative comparisons of part dimensions can be measured or relied upon. Thus, the rejection of claim 1 based on the dimensions illustrated in the '290 reference is improper and the '290 reference fails to disclose or suggest every limitation of claims 1 and 2.

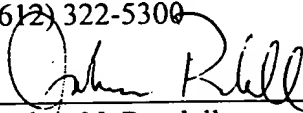
In view of the above, Applicants request reconsideration of the application in the form of a Notice of Allowance.

Respectfully submitted,



Date: December 11, 2002

MERCHANT & GOULD P.C.
P.O. Box 2903
Minneapolis, Minnesota 55402-0903
(612) 322-5300



Joshua N. Randall
Reg. No. 50,719
JNR:PSTdb:ae

VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Drawings

New Figures 7 and 8 have been added as shown in the attached Proposed Changes to the Drawings.

In the Specification

The brief description of Figures 5 and 6 on page 6, lines 10-15 has been replaced with the following new description:

FIG. 5 is a graph showing the relation between the durability index and the proportion of width of the elastic rollers of the roller chain; [and]

FIG. 6 is a graph showing the relation between the durability index and the amount of elastic deformation of the elastic rollers of the roller chain[.];

The brief description of Figures 7 and 8 on page 6, after line 15 of the specification has been added to as follows:

FIG. 7 is a fragmentary plan view of a low noise chain according to a modification of the present invention; and

FIG. 8 is an enlarged view of a part of FIG. 7.

The paragraph beginning at page 6, line 26 of the specification has been replaced with the following new paragraph:

It will be appreciated that the length of the roller chain 10 comprises more than two longitudinal portions of uniform lengths, and the zigzag pattern of the elastic rollers 18 in one longitudinal chain portion is opposite in phase to the zigzag pattern of the elastic rollers 18 in the adjacent longitudinal chain portion. In FIGS. 7 and 8, one longitudinal chain portion and the adjacent longitudinal chain portion of the roller chain 10 are designated by CH1 and CH2, respectively.

In the Claims

Claim 1 has been amended as follows:

1. (Amended) A low noise roller chain comprising:

inner and outer links alternately arranged and articulately connected together in a longitudinal direction of the roller chain,

the inner links each having a bushing and a pair of inner plates connected to opposite ends of the bushing, respectively,

the outer links each having a pin and a pair of outer plates connected to opposite ends of the pin, respectively, the pin extending through the bushing; and

a rigid roller made of metal and an elastic roller made of elastic material that are arranged end to end and fitted on the bushing so as to jointly form a roller assembly,

the elastic roller having a width along [the] an axis of the roller assembly, which is 13 to 45% of [the] an overall width of the roller assembly along the axis thereof, and

the elastic roller having a uniform thickness throughout the width thereof, the thickness of the elastic roller being[, which is] larger than [the] a thickness of the rigid roller by 5 to 25% of the thickness of the elastic roller.



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/893,109	06/27/2001	Yoshio Kurokawa	8373.245US01 ✓	4901

23552 7590 09/11/2002

MERCHANT & GOULD PC
P.O. BOX 2903
MINNEAPOLIS, MN 55402-0903

CBH

EXAMINER

STEFANON, JUSTIN

ART UNIT PAPER NUMBER

3682

DATE MAILED: 09/11/2002

Resp. 31 PTA: Dec. 11, 2002

Resp. 35A: Mar. 11, 2003

D ✓

Please find below and/or attached an Office communication concerning this application or proceeding.

PROLAW

Office Action Summary

Application No.

09/893,109

Applicant(s)

KUROKAWA ET AL.

Examiner

Justin Stefanon

Art Unit

3682

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 June 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Art Unit: 3682

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the roller chain comprising two or more longitudinal chain portions of claim 3, line 2 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claim 3 is rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. It is unclear from the specification what "a roller chain comprising two or more longitudinal chain portions" refers to.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-3 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

6. Claim 1 recites the limitations "the axis" in line 15, "the overall width" in line 16, and "the thickness" in line 19. There is insufficient antecedent basis for these limitations in the claim.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1-2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent Document 7-83290.

The Japanese document discloses a chain with inner and outer links 13,14 with a bushing 12 and a pin 11, a rigid roller 15 and an elastic roller 16. As shown in Figure 5, the elastic rollers are arranged in a zigzag pattern in a longitudinal direction of the chain. The elastic roller, as shown in Figures 2 and 4, is approximately 20% of an overall width of the roller assembly along a longitudinal axis of the roller assembly, and as shown in Figure 6 varies in thickness from approximately equal to the thickness of rigid roller to approximately 1.5 times as thick as the rigid roller, i.e. 0 to 50% of the thickness of the elastic roller, which comprises 5 to 25% of the thickness of the elastic roller. While the Japanese document does not show precise ranges of width ratios in the drawings, the

Art Unit: 3682

present disclosure does not show any unexpected results. It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the claimed ratios of width and thickness, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art shows various roller chains utilizing elastic rollers in conjunction with rigid metallic rollers, including US Pat. Nos. 5,943, 855 to Morimoto et al. and 4,428,739 to Shimano.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Justin Stefanon whose telephone number is 703-305-1945. The examiner can normally be reached on Mon-Fri 6 - 3:30, alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David A. Bucci can be reached on 703-308-3668. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-7687 for regular communications and 703-305-7687 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1113.

js
September 9, 2002

CHONG H. KIM
PRIMARY EXAMINER

FORM 1449

INFORMATION DISCLOSURE STATEMENT

IN AN APPLICATION

(Use several sheets if necessary)

Docket Number:

8373.245US01

Application Number:

09/893109

Applicant: KUROKAWA et al.

Filing Date: June 27, 2001

Group Art Unit: Unknown-3682

U.S. PATENT DOCUMENTS

EXAMINER INITIAL	DOCUMENT NO.	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE

FOREIGN PATENT DOCUMENTS

	DOCUMENT NO.	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
						YES	NO
JS	5-586	January, 1989	Japan	—	—		
JS	1-40363	December, 1989	Japan	—	—		
JS	2-15067	April, 1990	Japan	—	—		
JS	3-26344	June, 1991	Japan	—	—		
JS	07071539	March, 1995	Japan	—	—		
JS	07083290	March, 1995	Japan	—	—		

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

RECEIVED

JAN 05 2004

GROUP



23552

PATENT TRADEMARK OFFICE

EXAMINER

DATE CONSIDERED

8.29.02

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form for next communication to the Applicant.

Notice of References Cited

Application/Control No.

09/893,109

Applicant(s)/Patent Under
Reexamination
KUROKAWA ET AL.

Examiner

Justin Stefanon

Art Unit

3682

Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
	A	US-5,943,855	08-1999	Morimoto et al.	474/206
	B	US-4,428,739	01-1984	Shimano, Keizo	305/106
	C	US-			
	D	US-			
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N	JP 55132445 A	10-1980	Japan	TSURUMI, MANABU	F16G 13/06
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

APPENDIX 3

REFERENCES RELIED UPON BY THE EXAMINER

- A. Japanese Patent Document No. 7-83290